

# Geographic Tongue : A Rare Occurrence

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## Abstract

This report describes a case report of Geographic tongue (GT) in Bareilly, UP. The patient was having soreness or burning sensation and sometimes itching. The clinical examination revealed features characteristic of GT.

## Introduction

GT also known "Benign migratory glossitis," "Benign migratory stomatitis," "Glossitis areata exfoliativa," "Glossitis areata migrans," "Lingua geographica," "Stomatitis areata migrans," "Transitory benign plaques of the tongue" and "erythema migrans". It is an inflammatory disorder of unknown etiology detected on routine dental examinations<sup>1</sup>.

The pattern of the lesions gives the surface of the tongue the appearance of a map, hence the term 'geographic'. These lesions appear as multiple, well-demarcated zones of erythema, concentrated at the tip and lateral borders of tongue. This erythema is due to atrophy of the filiform papilla; while fungiform and other tongue papillae are unaffected thus sense of taste is preserved. These atrophic areas are typically surrounded at least partially by

a slightly elevated, yellowish-white, serpentine or scalloped border. The lesions appear quickly in one area, healing within a few days or weeks (without residual scar formation), and then they develop in a very different area. Frequently, the lesion begins as a small white patch, which then develops a central erythematous atrophic zone and enlarges centrifugally. The lesions are usually asymptomatic, although a burning sensation or sensitivity to hot or spicy foods may be noted when the lesions are active. Very infrequently, erythema migrans may occur on oral mucosal sites other than the tongue. In this instance, the condition is called ectopic geographic tongue<sup>1</sup>.

This study reports a case of geographic

tongue, a rare occurrence in Bareilly.

## Case Report

A 30 years old male, a native of Bareilly, reported to the department of oral diagnosis with the chief complaint of burning sensation in mouth since 1 month. Patient gave the history of recurrent occurrence of ulceration of tongue and other parts of mucosa of mouth. There is a history of periodic change in the site of ulcers. The lesions are associated with burning sensation, especially on intake of hot and spicy food. Sometimes itching was also associated. The general health of the patient was excellent except for some gastric disturbances.

Clinical examination revealed erythematous areas present on the lateral dorsal surface and ventral surface of tongue surrounded by a white hyperkeratotic rim (Fig. 1, 2, 3, 4). One erythematous area surrounded by white colour margin present on the junction of labial and buccal mucosa

**Diagnosis:** Benign migratory glossitis

## Discussion

GT is a common lesion that mostly appears on the dorsal and lateral border of the tongue<sup>1</sup>. No study could mention a specific ethiology for GT; yet there are several factors such as stress, allergy, and genetic and systemic diseases<sup>1</sup>.

GT is usually an isolated abnormality but has been associated with psoriasis, atopic diathesis, diabetes mellitus, reactive bronchitis, anaemia, hormonal disturbances, Reiter's and Down's syndromes, and lithium therapy<sup>2,3</sup>.

Psychosomatic factors appear to play a significant role in the etiology of geographic tongue<sup>4</sup>. Redman et al., found a higher prevalence of geographic tongue in mentally ill patients than in university students. They also noted that under emotional stress the student group with geographic tongue tended to have more severe lesions<sup>5</sup>.

Although environmental factors are

apparently important in the production of lesions, a number of investigators have observed them in several members of a family, suggesting that there may also be a hereditary factor<sup>6, 7, 8, 9, 10</sup>. A family history has also been reported to be associated with GT which may be genetic and linked to major histocompatibility complex<sup>11</sup>. Analysis of data and inspection of the pedigrees suggest that a polygenic model of hereditary transmission, with a threshold for susceptibility to environmental factors<sup>12</sup>.

Geographic tongue is said to occur more often in women, especially during high hormonal times such as during ovulation or pregnancy, and while taking birth control pills (particularly around the 17th day)<sup>13</sup>.

It has been reported that in early onset psoriasis, the prevalence of GT is higher than in late-onset psoriasis. Early onset psoriasis is usually considered to be more severe and to be more strongly associated with ungual and facial involvement compared with late-onset disease. Thus, GT may indirectly reflect the severity of psoriasis<sup>14,15,16</sup>.

Nutritional deficiencies have been suspected because of the well-known association between dietary deficiencies of iron or B-complex vitamins and a generalized glossitis with papillary atrophy. It is possible that this type of glossitis may sometimes be mistaken for benign migratory glossitis, especially when only the tip and lateral borders of the tongue are involved<sup>12</sup>.

Allergy has been implicated because of a reported high incidence of benign migratory glossitis among children with overt allergic manifestations<sup>17,18</sup> and because of its association with milk intolerance in young children<sup>19</sup>. However, other investigators have reported that although they observed a high incidence of skin and respiratory disorders in children with geographic tongue, most of these disorders were considered to be non-allergic in

nature<sup>20</sup>. On balance, the importance of allergic phenomena in the etiology of benign migratory glossitis seems worthy of further investigation.

**References**

1. Neville BW, Damm DD, Allen CM, Bouguot JE. Oral and Maxillofacial Pathology, 3rd ed. W.B. Saunders Company. Philadelphia, 2009; pp.677-9.
2. Bruce AJ, Rogers RS 3rd. Oral psoriasis. Dermatol Clin. 2003; 21: 99-104.
3. Morris LF, Phillips CM, Binnie WH, Sander HM et al. Oral lesions in patients with psoriasis: a controlled study. Cutis 1992; 49: 33944.
4. Saprio SM, Shklar G. Stomatitis areata migrans. Oral Surg Oral Med Oral Pathol 1973;36:28-33.
5. Redman RS, Vance FL, Gorlin RJ, Peagler FD, Meskin LH. Psychological component in the etiology of geographic tongue. J Dent Res 1966; 45: 1403-8.
6. Spehlman O. Ein Beitrag zur Kenntnis der Lingua geographica. Doctoral dissertation, University of Tartu, Estonian S.S.R., 1892
7. Gautier V. De la desquamative de la langue. Rev

- Med Suisse Rom 1:589-607; 637-652, 1881
8. Hutchinson J. Long persisting liability to sores on the lips and in the mouth-ringworm tongue-history of the same conditions in several members of the family. Arch Surg (London) 4:156-158, 1893
9. Turpin R, Caratzali A. Contribution a l'etiologie de la glossite exfoliatrice marginee. Presse Med 64:1273-1274, 1936
10. Witkop CJ JR, Barros L. Oral and genetic studies of Chileans, 1960. I. Oral anomalies. Amer J Phys Anthropol 21:15-24, 1963
11. Fenerli A, Papanicolaou S, Papanicolaou M, Laskaris G. Histocompatibility antigens and geographic tongue. Oral Surg Oral Med Oral Pathol 1993;76:476-9.
12. Redman RS, Shapiro BL, and Gorlin RJ. Hereditary Component in the Etiology of Benign Migratory Glossitis. Amer J Hum Genet, 1972; 24: 124-133.
13. Waltimo J. Geographic tongue during a year of oral contraceptive cycles. Br Dent J 1991; 171: 94-6.
14. Daneshpazhooh M, Moslehi H, Akhyani M, Etesami M. Tongue lesions in psoriasis: a controlled study. BMC Dermatol 2004; 4: 16.

15. Young Park J, Hyun Rim J, Beom Choe YII, Youn J. Facial psoriasis. comparison of patients with and without facial involvement. J Am Acad Dermatol 2004; 50: 5824.
16. Zargari O. The prevalence and significance of fissured tongue and geographical tongue in psoriatic patients. Clinical and Experimental Dermatology, 2005; 31: 192195.
17. Weigert R. Die diagnostische Bedeutung der Landkartenzunge. Mschr Kinderheilk. 57:306-311, 1933.
18. Clein NW. The growth and development of allergy. Ann Allerg 3:1-11, 1945
19. Mc Lendon PA, Jaeger DS. Milk intolerance, the cause of a nutritional entity. Southern Med J 36:571-575, 1943.
20. Rahamimoff P, Muhsam HV. Some observations on 1,246 cases of geographic tongue. Amer J Dis Child 93:519-525, 1957.

**Legends**

- Fig 1: Lesion on dorsal tongue surface
- Fig 2: Lesion on lateral tongue surface
- Fig 3: Lesion on ventral tongue surface
- Fig 4: Lesion on ventral tongue surface



Fig. 1



Fig. 2

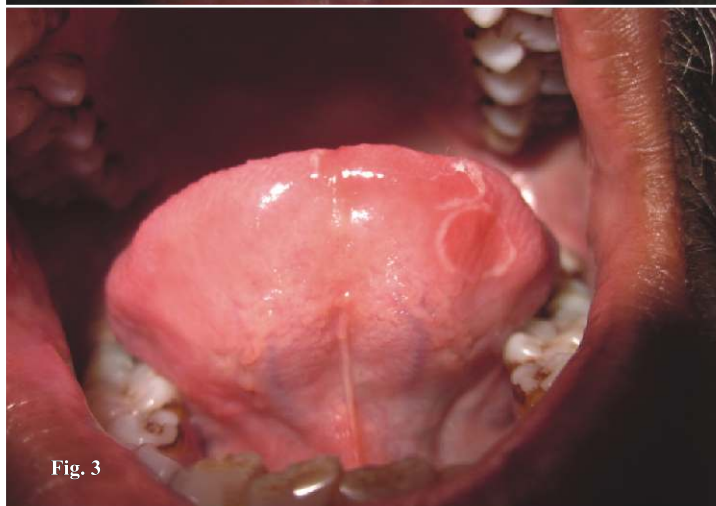


Fig. 3



Fig. 4